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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/605,431

09/30/2003

Patrick A. Coico

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EXAMINER

KORNAKOV, MICHAEL

ART UNIT

PAPER NUMBER

1746

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

01/11/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/605,431	Applicant(s) COICO ET AL.	
	Examiner Michael Kornakov	Art Unit 1746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) 15-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 10/09/03, 9/30/03
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicants' election with traverse of claims 1-14 and the specie of metal hydroxide, the specie of soluble salt of KOH, the specie of tert-butyl alcohol solvent, the specie of non-ionic surfactant (alcohol ethoxylate), the specie of aromatic hydrocarbons in the reply filed on 10/18/2006 is acknowledged. While the election is made with traverse, Applicants actually did not point out whether the reasons advanced by the Examiner to establish distinctiveness between the inventions as claimed and grouped or the evidence of separate status, classification and/or search are in error. Therefore, the restriction/election of species requirement is made **FINAL**.
2. Claims 15-27 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to nonelected inventions, there being no allowable generic or linking claim. Claims 1-14 are examined on the merits.

Specification

3. The specification is objected to as failing to provide proper antecedent basis for the claimed subject matter. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o). Claim 13 recites the limitation "'soluble salts...consisting of aromatic hydrocarbons...". There is insufficient antecedent basis for this limitation in the claim.
4. The disclosure is objected to because of the following informalities: paragraphs 0019 and 0045 recite "soluble salt, such as KOH". Apparently, the recitation "salt" is not

Art Unit: 1746

a proper term for KOH, since by definition the salt is "a compound, that results from replacement of the acid hydrogen of an acid by a metal or a group acting like a metal" (Merriam-Webster's Collegiate Dictionary, tenth edition, page 1032).

Claim Objections

5. Claims 12 and 13 objected to because of the following informalities: claim 12 recites "soluble salt...consisting of KOH". Claim 13 recites "salts selected from the group consisting of...aromatic hydrocarbons". Apparently, the recitation "salt" is not a proper term for KOH or aromatic hydrocarbons, since by definition the salt is "a compound, that results from replacement of the acid hydrogen of an acid by a metal or a group acting like a metal" (Merriam-Webster's Collegiate Dictionary, tenth edition, page 1032).

6. Applicants are encouraged to amend the specification and claims to better reflect what applicant intends to claim as the invention. If the application becomes a patent, it becomes prior art against subsequent applications. Therefore, it is important for later search purposes to have the patentee employ **commonly accepted terminology**, particularly for searching text-searchable databases.

7. Claim 13 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Claim 13 depends on claim 12 and recites soluble salts, which are apparently already listed in claim 12. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

9. Claims 1-4 are rejected under 35 U.S.C. 102(b) as being anticipated by Stephanie et al (U.S. 5,891,257).

Stephanie discloses a system and method for removing protective polymer sealant from the circuit board assembly (abstract, col.2, lines 35-40). The method comprises providing a component (substrate) that has a thermoset polymer sealant on its surface (col.2, lines 45-48), then the thermoset polymer (encapsulant) is visually detected, and the solution that dissolves (depolymerizes) the encapsulant either by hydrolysis or by transesterification is applied (col.2, lines 54-65, Fig.1, col.8, lines 31-46, claim 19), thereby removing the degraded part of the encapsulant from the intended portion of the surface. With regard to a confinement of the specific areas on the surface that should not be subjected to depolymerizing solution, see col.2, lines 54-65.

According to Stephanie, the depolymerization solution comprises a salt saturated

Art Unit: 1746

solvent (col.5, lines 65-67, col.6, lines 1-6, col.8, lines 45-55, col.9, lines 1-15) and surfactant (col. 9, lines 26, 27). With specific regard to claim 3, Stephanie provides the confinement means, which is the cylindrical portion 23 of the support 22, which functions to isolate a specific device (area) on the circuit assembly which to be contacted with the leaving the other parts intact. Further the narrow diameter of the upper portion 23 functions to focus the solvent flow onto the specific intended device of the circuit assembly (Fig.3, col.4, lines 18-24). Since the flow of solvent is precluded to contact with some of the features, the protection of the above features including electrically active features is inherent (see especially col.8, lines 38-41).

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

11. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Art Unit: 1746

12. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

13. Claims 5-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stephanie.

With regard to claim 5, reciting "removing a substantial portion of said bulk thermoset polymer sealant such that residual thermoset polymer sealant remains on said portion of said surface...and locally applying said depolymerization cleaning solution substantially only to said residual thermoset polymer sealant...", it is noticed here that the recited limitations do not preclude from applying depolymerization solution while removing a bulk portion of thermoset polymer and therefore one skilled in the art would have found obvious to apply depolymerization solution in the method of Stephanie to remove protective polymer sealant or at least its bulk portion, examine the surface area of the circuit board and reapply depolymerization solution upon necessity to remove residues of thermoset polymer from surface area of the circuit board.

With regard to heating substrate having the residual polymer, in the operation described by Fig.2B Stephanie provides a fixture 40 that is used to warm the solvent

Art Unit: 1746

and the **system** (including substrate. It is also well known that any interaction of a polymer with solvent is enhanced by heating either one of the solvent or substrate on which the polymer is adhered. As such it would have been obvious to those skilled in the art at the time the invention was made to heat the surface having the bulk polymer or polymer's residue in order to facilitate the reaction between the polymer and the solvent and thus to enhance the removal process. It is also obvious to repeat the application of the solvent as many times as needed in order to achieve better removal of the polymer.

With regard to claim 6, please, see col.9, lines 40-50 (the table). With regard to claims 7 and 8, the system and method of Stephanie allow the solvent to remain on the surface of the substrate for the time of 5-15 minutes (see table in lines 40-50 of col.9), the stream of the solvent from the nozzle rinses off the sealant from the surface of the substrate, and the cleaned substrate is removed from the system (see col.10, lines 25-40). Since the system is heated up to the operating temperature of the solvent and remains heated with the substrate after the solvent was applied, the substrate is inherently dried under such conditions. With regard to claim 9, the claim provides no material difference between "pre-drying" and "complete drying" therefore, both steps are considered as a part of drying the substrate at the working temperature of the solvent.

14. Claims 1, 5, 7, 10, 11, 14 are rejected under 35 U.S.C. 102(a/e) as being anticipated by Sachdev (U.S. 2002/0000239).

Sachdev discloses a stripping method for reworking electronic components, wherein the elastomeric silicone adhesive can be removed from electronic components

Art Unit: 1746

by a solution comprising 0.05-0.5% of a non-ionic surfactant, 0.5-5% of tetraalkylammonium hydroxide and a solvent, wherein the solution causes the disintegration of a polymer [0053]. Since the thermoset polymers are only named broadly by Applicant in [0031] of the instant specification, as polysiloxanes, and since Sachdev discloses specific polysiloxanes in [0006], the polymers of Sachdev ARE similar to those instantly claimed, consult *In re Spada* 15 USPQ2nd 1655 (Fed.Cir. 1990), stating that the same compounds cannot have mutually exclusive properties. With specific regard to claims 5 and 7, Sachdev discloses the steps as claimed, including rinsing the residual polymer on the surface [0027]. The parts are treated with the tetraalkyl ammonium hydroxide containing stripping solution. After treating the electronic module with the tetraalkyl ammonium hydroxide containing stripping solution, the component or part is immediately (preferably within less than 15 minutes, more preferably within less than 5 minutes) rinsed preferably by spray rinse with deionized water, and preferably dried with an inert gas such as nitrogen [0062].

15. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Stephanie et al (U.S. 5,891,257) in view of Sachdev (U.S. 2002/0000239).

With regard to claim 12, Sachdev discloses the method of stripping thermoset silicone containing polymer from semiconductor surfaces with the use of tetraalkylammonium hydroxides, which are listed in the instant claim 12, solvents and non-ionic surfactants. Stephanie also discloses the method of stripping thermoset adhesive from semiconductor surfaces using surfactants and salts in the specific solvents, as discussed above. Stephanie utilizes glycols (as also used by Sachdev)

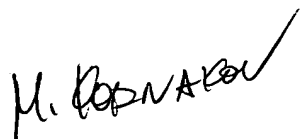
Art Unit: 1746

along with t-butyl alcohol, thus providing the motivation to use one in lieu of the other, and the use of t-butyl alcohol is obvious over the use of n-butyl alcohol, as being structural isomer, and therefore having similar functional characteristics, as per In re Wilder, 563 F.2d 457, 460, 195 USPQ 426, 429 (CCPA 1977).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael Kornakov whose telephone number is (571) 272-1303. The examiner can normally be reached on 9:00am - 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on (571) 272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



Michael Kornakov
Primary Examiner
Art Unit 1746

Application/Control Number: 10/605,431

Page 10

Art Unit: 1746

12/28/2006